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adult respiratory distress syndrome. He was being ventilated with 100% oxygen and maintaining a saturation of 85%. The task was to replace the 6.5-mm nasal ETT with a 8.5-mm oral tube. After the upper airway was topically anesthetized and the intravenous sedation was administered, the WuScope, preloaded with the new ETT, was inserted into the oropharynx and positioned anterior to the nasal ETT. As the blade entered the vallecula, the triangular opening between the anterior commissures of the vocal cords and the nasal ETT was easily exposed. A suction catheter (18 French) was advanced out of the new ETT lumen and passed through this triangular opening into the trachea. With the suction catheter securely held in place by the operator firmly compressing the new ETT at its proximal end, the nasal ETT was removed. The new ETT was then advanced over the suction catheter into the trachea. The entire tube exchange procedure was performed by one person, took only a few minutes, and the actual conversion time was less than 10 s, with no change in oxygen saturation.

The WuScope is a tubular laryngoscope with fiberoptic imaging. The rigid blade allows exposure of the larynx. The tubular structure overcomes soft tissue obstruction, creates an intubating space, and protects fiberoptic lenses from secretions. Most importantly, there is minimal interruption of the patient's ventilatory support, and the operator can visually ensure the new ETT a free passage through the glottis. The WuScope technique for tube exchange has worked well for us and should be considered by others as an alternative approach to this important and difficult problem.

Lastly, we would like to share with the readers some issues of importance. First, as with any of the previously reported tube exchange methods, previous expertise with the use of the WuScope is essential. In our institution, we have a combined experience of more than 1000 intubations with this device. Second, we find the use of muscle relaxants is often not necessary for tube exchange using the WuScope technique because glottic exposure can be achieved in the neutral position without jaw lifting or head extension. Before the procedure, we first thoroughly suction the patient's upper airway, then trickle 10 ml lidocaine, 2 or 3%, into the pharynx to allow the glottic area to be anesthetized. Third, as with other techniques, care must be taken to ensure that the suction catheter is not inadvertently withdrawn as the original ETT is removed. Fourth, if one is concerned that the oxygen insufflation provided through the WuScope oxygen channel may be insufficient for a patient with severe adult respiratory distress syndrome, a tube exchanger, rather than a suction catheter, may be an alternative conduit for tube advancement and may provide the opportunity for jet ventilation if oxygen desaturation occurs or if the tube exchange requires additional time.

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Venous Cannulation in Small Infants: A Simple Method to Improve Success

To the Editor.—It can be quite difficult to insert an adequately sized and reliable intravenous cannula into small infants. Small infants frequently arrive in the operating room bearing the scars of multiple previous attempts at venous access, which limit the remaining options. If blood transfusion may be required, it is necessary to have at least a 22-gauge cannula.

I have found that my success rate at the cannulation of very small vessels, e.g., those fine veins on the dorsum of a preterm or small infant's foot, has been much improved by using the following technique. A venous tourniquet is placed and the skin is prepared in the usual fashion. A 22-gauge angiocath (Angiocath, Becton Dickinson Infusion Therapy Systems, Inc., Sandy, UT) is inserted toward the vein at a shallow angle. As soon as there is a "flashback" of blood into the hub of the needle, the cannula is held absolutely still, and the needle is very gently removed. Blood will usually be seen flowing back into the cannula. A 0.018" (0.46-mm dia) spring-wire guide (Spring wire

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guide AW-04018, Arrow International, Inc., Reading, PA) is now gently advanced through the cannula into the vein. In most instances, this guide wire is easily inserted, even into very small veins, and can be seen tracking inside the vein for some distance up the limb. The cannula is now advanced over the guide wire with full confidence that it will end up lying freely within the lumen of the vein and that it will provide a very reliable intravenous route.

This technique should be considered for all very small infants and especially for those in whom all the “good veins” have already been used, traumatized, or both. During the past month I have used this method in 11 infants, and it has been successful in every case. A former resident, now a practicing pediatric anesthesiologist, has also adopted this method, has proclaimed it to be most useful, and encouraged me to submit this report (R Seal, personal communication, 1998).

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